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         NOV 21 CAS patent coverage to include exemplified prophetic
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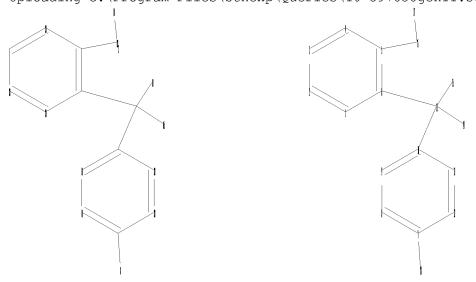
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```
chain nodes :
13  14  15  16  17  18
ring nodes :
1  2  3  4  5  6  7  8  9  10  11  12
chain bonds :
5-16  6-13  7-18  10-13  13-15  13-14  16-17
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  7-8  7-12  8-9  9-10  10-11  11-12
exact/norm bonds :
13-15  13-14
exact bonds :
5-16  6-13  7-18  10-13  16-17
normalized bonds :
```

Match level:

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS

L1 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1 STR

Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss full

FULL SEARCH INITIATED 17:18:19 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 9547 TO ITERATE

100.0% PROCESSED 9547 ITERATIONS 72 ANSWERS

SEARCH TIME: 00.00.01

L2 72 SEA SSS FUL L1

=> file caplus

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ENTRY SESSION

FULL ESTIMATED COST 178.82 179.03

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FILE COVERS 1907 - 2 Dec 2008 VOL 149 ISS 23 FILE LAST UPDATED: 1 Dec 2008 (20081201/ED)

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=> s l1 and ("cyclic anhydride" or imide)
 REG1stRY INITIATED

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SAMPLE SEARCH INITIATED 17:25:17 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 536 TO ITERATE

100.0% PROCESSED 536 ITERATIONS 3 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 9331 TO 12109

PROJECTED ANSWERS: 3 TO 163

L3 3 SEA SSS SAM L1

L4 9 L3

10909 IMIDES

30875 IMIDE

(IMIDE OR IMIDES)

0 L4 AND ("CYCLIC ANHYDRIDE" OR IMIDE)

=> file caplus

 L_5

COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 7.32 192.09

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 17:26:14 ON 02 DEC 2008
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FILE COVERS 1907 - 2 Dec 2008 VOL 149 ISS 23 FILE LAST UPDATED: 1 Dec 2008 (20081201/ED)

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Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=> s 12 and ("cyclic anhydride" or imide)

69 L2

346312 "CYCLIC"

358 "CYCLICS"

346453 "CYCLIC"

("CYCLIC" OR "CYCLICS")

236963 "ANHYDRIDE"

35167 "ANHYDRIDES"

248380 "ANHYDRIDE"

("ANHYDRIDE" OR "ANHYDRIDES")

2333 "CYCLIC ANHYDRIDE"

("CYCLIC"(W)"ANHYDRIDE")

25205 IMIDE

10909 IMIDES

30875 IMIDE

(IMIDE OR IMIDES)

L6 1 L2 AND ("CYCLIC ANHYDRIDE" OR IMIDE)

=> d 16 abs ibib hitstr

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN

GΙ

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Compds. I [R1 = H, or group II; R2 = CN, or a group which may be converted to CN; R3 = halo; X = double or single bond; Y = bond, O, S, or NH; W = O, or S; R4 = alkyl, alkenyl, alkynyl, aryl, hetroaryl, all of which may be optionally substituted with alkoxy, alkythio, halo, OH, NH, NO2, CN, alkylamino, aryl, aryloxy, arylthio, and heteroaryl], or a salt from a mixture of I [R1 = group II] and I [R1 = H], which was reacting with cyclic anhydride or imide to form a mixture of I [R1 = group II] and an esters III (R5 = substituted heteroaryl carboxylic acid), were prepared by enzymic acylation or deacylation, separated, isolated and purified and used for manufacturing of escitalopram and derivs. Compds. I [R1 = group II] were separated from esters III by precipitation of III from the mixture,

or by partitioning between an organic solvent and aqueous solvent, by adsorbing $\ensuremath{\mathsf{I}}$

[R1 = group II] on a basic resin. Thus, addition of succinic anhydride to a mixture of butyric acid 5-cyano-2-[4-dimethylamino-1-(4-fluorophenyl)-1-hydroxybutyl]-benzyl ester and prepared by enzymic resolution 4-[(S)-4-dimethylamino-1-(4'-fluorophenyl)-1-hydroxybutyl]-3-hydroxymethylbenzonitrile, gave after precipitation and washing 2,02 g of escitalopram [(S)-1-(3-dimethylamino-propyl)-1-(4-fluoro-phenyl)-1,3-dihydro-isobenzofuran-5-carbonitrile] hydrogen oxalate (ee = 95%).

ACCESSION NUMBER: 2005:902848 CAPLUS

DOCUMENT NUMBER: 143:248161

TITLE: Method for the separation of intermediates which may

be used for the preparation of escitalopram

INVENTOR(S): Lyngso, Lars Ole
PATENT ASSIGNEE(S): H. Lundbeck A/S, Den.
SOURCE: PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND DATE	APPLICATION NO.	DATE
WO 2005077891	A1 20050825	WO 2005-DK75	20050202
W: AE, AG, AL,	AM, AT, AU, AZ,	BA, BB, BG, BR, BW,	BY, BZ, CA, CH,
CN, CO, CR,	CU, CZ, DE, DK,	DM, DZ, EC, EE, EG,	ES, FI, GB, GD,
GE, GH, GM,	HR, HU, ID, IL,	IN, IS, JP, KE, KG,	KP, KR, KZ, LC,
LK, LR, LS,	LT, LU, LV, MA,	MD, MG, MK, MN, MW,	MX, MZ, NA, NI,
NO, NZ, OM,	PG, PH, PL, PT,	RO, RU, SC, SD, SE,	SG, SK, SL, SY,
TJ, TM, TN,	TR, TT, TZ, UA,	UG, US, UZ, VC, VN,	YU, ZA, ZM, ZW
RW: BW, GH, GM,	KE, LS, MW, MZ,	NA, SD, SL, SZ, TZ,	UG, ZM, ZW, AM,
AZ, BY, KG,	KZ, MD, RU, TJ,	TM, AT, BE, BG, CH,	CY, CZ, DE, DK,
EE, ES, FI,	FR, GB, GR, HU,	IE, IS, IT, LT, LU,	MC, NL, PL, PT,
RO, SE, SI,	SK, TR, BF, BJ,	CF, CG, CI, CM, GA,	GN, GQ, GW, ML,
MR, NE, SN,	TD, TG		
AU 2005212455	A1 20050825	AU 2005-212455	20050202
CA 2555980	A1 20050825	CA 2005-2555980	20050202
EP 1716108	A1 20061102	EP 2005-700625	20050202
EP 1716108	B1 20081015		
R: AT, BE, CH,	DE, DK, ES, FR,	GB, GR, IT, LI, LU,	NL, SE, MC, PT,
IE, SI, LT,	LV, FI, RO, MK,	CY, AL, TR, BG, CZ,	EE, HU, PL, SK,
BA, HR, IS,	YU		
CN 1918112	A 20070221	CN 2005-80004594	20050202
BR 2005007580	A 20070731	BR 2005-7580	20050202
JP 2007524678	T 20070830	JP 2006-552461	20050202
AT 411278	T 20081015	AT 2005-700625	20050202
MX 2006PA08977	A 20061020	MX 2006-PA8977	20060808

IN 2006CN02945 20070608 IN 2006-CN2945 20060810 Α 20060912 NO 2006004086 NO 2006-4086 20060912 Α US 20070190624 20070816 US 2006-597836 20061108 A 1 PRIORITY APPLN. INFO.: DK 2004-217 20040212 Α US 2004-544970P P 20040212 WO 2005-DK75 W 20050202

OTHER SOURCE(S): CASREACT 143:248161; MARPAT 143:248161

IT 488787-59-3P

RL: BPN (Biosynthetic preparation); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

(preparation by enzymic acylation or deacylation, separation, isolation and purification by precipitation, partitioning, or adsorption, of

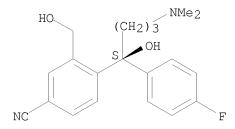
benzonitriles used as

intermediates for synthesis of escitalopram and derivs.)

RN 488787-59-3 CAPLUS

CN Benzonitrile, 4-[(1S)-4-(dimethylamino)-1-(4-fluorophenyl)-1-hydroxybutyl]-3-(hydroxymethyl)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 103146-25-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation by enzymic acylation or deacylation, separation, isolation and purification by precipitation, partitioning, or adsorption, of

benzonitriles used as

intermediates for synthesis of escitalopram and derivs.)

RN 103146-25-4 CAPLUS

CN Benzonitrile, 4-[4-(dimethylamino)-1-(4-fluorophenyl)-1-hydroxybutyl]-3-(hydroxymethyl)- (CA INDEX NAME)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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